



Global Mining & Tailings Safety Initiative

January 2020

Adam C.T. Matthews & John Howchin
Initiative Co-Chairs



Issue 1: More mined for less as ore grades decline

Issue 2: Trend of tailings dam failures

Issue 3: Unknown number of dams and locations

**Issue 4: Failure to implement Past recommendations
& lack of a global standard**

Issue 5: Fundamentally waste treated as an externality

Global Mining & Tailings Safety Initiative

1st Roundtable: 4th March

2nd Roundtable: 1st April

3rd Roundtable: 7th May

4th Roundtable: 10th June

5th Mining & Tailings Safety Summit: 31st October



Investor lead for engagement with impacted communities in Brumadinho and Mariana

1st Investor Intervention: New Global Standard

1. A global independent and transparent classification system of the world's tailings dams.
2. Based upon the consequences of failure.
3. Independently audited and accessible to public and accessible to communities, workers, investors, insurers, lenders and regulators.

Call for new independent mine safety system to address tailings dam failures

31/01/2019

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At a glance

Joint call issued by Church of England funds, Swedish Public Pension funds, Dutch funds APG and Robeco, New Zealand Super, UK's LGPS Central and Canadian fund BMO Global Asset Management; together with combined assets over £1 / \$1.3 / €1.1 trillion

The Church of England Pensions Board, Church Commissioners for England, along with Sweden's Public Pension Funds Council on Ethics for AP1, AP2, AP3 and AP4, and funds representing over £1 / \$1.3 / €1.1 trillion in assets under management have today jointly called for a global independent public classification system that monitors the safety risk of mining company tailings dams. The call follows the failing of the Vale dam in Brumadinho, Brazil and the tragic loss of lives, livelihoods as well as devastating environmental impact.

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BHP embraces idea of independent tailings dam monitor after deadly breach

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FT FINANCIAL TIMES

Neil Hume FEBRUARY 19, 2019

chief investment officer News In Focus Surveys Lists Events Multimedia

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Newsmakers February 1, 2019

\$1.3 Trillion Church-led Pension Coalition to Pressure Mines on Dam Safety

After the Brazil dam collapse, a call for mining company investors to insist on...

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Anglo American open to more engagement on dam safety, CEO says

The Telegraph

PREMIUM

Business

We must work together to prevent a new dam disaster

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ADAM MATTHEWS

10 FEBRUARY 2019 • 6:18PM

THE WALL STREET JOURNAL.

WORLD | LATIN AMERICA

Deadly Brazil Mine Accident Puts Waste Dams in Spotlight

The deadly collapse raises questions on whether mining companies are spending enough to build and maintain waste-and-water dams

By Scott Patterson

Jan. 30, 2019 1:53 p.m. ET

REFERENCE HUB INDICES

IPE

Intelligence on European Pensions and Institutional Investment

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Investors call for action after Brazilian mining disaster

1 FEBRUARY 2019 BY GAIL MOSS

Church of England and fund managers in dam safety call

Investors with assets of over £1tn call for greater oversight following Brazil disaster



© Reuters

Henry Sanderson in London JANUARY 31, 2019

**Response:
Co-Convened:
Independent
Global Review
led by Professor
Bruno Oberle**



Co-convened by



Establishing an international standard for
the safer management of tailings storage
facilities



Latest on Mining

Petra's shares rise on discovery of \$14.9m blue diamond



New BHP boss shows miners need low-carbon leaders



BHP's new chief executive outlines strategy for miner



Australia to offer cheap boost rare earths

fastFT Mining

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Tough new global standards on mining waste storage under consideration

Harry Dempsey in London NOVEMBER 15 2019



Tough new safety standards for tailings dams, including the appointment of a qualified and experienced engineer to check their safety, have been proposed by a group representing the world's biggest miners as they seek to avoid any further disasters.



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2nd Intervention: Urgent Disclosure

- Letter to CEOs/Chairs of 726 listed extractive companies
- Disclosure required on all joint ventures & non operated JVs
 - 45 days to respond
 - US \$13 trillion in AUM supported
- 20 disclosure questions developed in consultation with:
 - Independent expert input
 - Independent technical expert input
 - Input from ICMM
 - 3 large and 1 small company input



Individualised letter to Mining company CEO/Chair
Address
Address
Address

5th April 2019

Re: Urgent request for information concerning tailings dam management

We write as 96 investors in the mining sector, who together represent over \$10.3 trillion in assets under management. This urgent engagement is being led by the Church of England Pensions Board and Swedish Council on Ethics for the AP Funds and backed by the UN-supported Principles for Responsible Investment (PRI).

The tragic loss of life from the Brumadinho and Samarco catastrophic tailings dam failures highlighted the devastating consequences when something goes wrong.

As responsible investors, we are committed to working with the mining sector to ensure that verifiable best practice standards are developed, implemented and maintained. To enable proper engagement on tailings dam management we need to assess the risks and the current state of tailings dam facilities that individual mining companies are associated with and/or have responsibility for, whether under construction, operation or retired/decommissioned.

Disclosure Request:

As institutional investors in the mining industry and in the absence of common public reporting standards on tailings storage facilities we respectfully request that you provide specific disclosures of all the tailings facilities of your company, as set out below. We ask that you provide this information, in accordance with the disclosure request included below (Annex 2), in table format. This disclosure should also include:

- All tailings facilities where the company has any interest, through subsidiaries, partnerships, joint ventures both incorporated and unincorporated and any other enterprises of whatever legal form.
- All joint venture partners reporting on jointly owned facilities, even if you are not the operating partner ("NOJV's"), should use the same facility name/identifier in the disclosure statement.

Given the urgency and magnitude of this issue, we request that the public disclosure of this information, certified by either the Chairperson of the Board of Directors and/or the Chief Executive Officer*, be placed on your company website within 45 days of the date of this letter. We are in the process of developing a public investor register of those companies that make the disclosures requested.

Response:

Of the 726 companies contacted the breakdown of responders to date:

- **40 out of the top 50** largest mining companies in the world responded.
- **74% of the industry** by market capitalisation **responded**.
- **55% of the industry** by market capitalisation **fully and publicly disclosed**.
- **23 out of 23** publicly listed members of ICMM responded.



Business Markets World Politics TV



COMMODITIES JUNE 7, 2019 / 12:39 AM / 3 DAYS AGO

Major miners reveal tailings dam data, action plans following disasters

Minjng Journal Edition

Market Data Webinars Research Events

EXPLORATION/DEVELOPMENT FINANCE COMMODITIES VIEWPOINT METS INVESTOR MINE RISK MANAGEMENT FUTURE OF MINING ALL SECTIONS

Tailings dam risks on display

Mining majors have outlined which of their tailings dams around the world pose the highest potential risks in response to questions from ethical investors in the wake of Vale's fatal tailings dam failure in Brazil in January.

S&P Global
Platts

Commodities Products & Services Methodology Market Insights

IN THIS LIST

METALS
Miners publish safety reviews after fatal collapses of tailings dams

METALS — 07 Jun 2019 | 12:43 UTC — London

Miners publish safety reviews after fatal collapses of tailings dams

FINANCIAL TIMES

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Latest on BHP Group PLC

BHP BHP sets out case for \$8bn Canadian potash project

BHP to retain Australian nickel assets amid electric car revolution

National courts have global companies in sights

BHP faces \$5bn lawsuit in dam disaster

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BHP says five dams pose 'extreme risk' in case of collapse

THE WALL STREET JOURNAL.



‘Sense of Dread’: How a Mining Disaster in Brazil Raised Alarms in Minnesota

Mine-waste dams around the world have drawn new scrutiny after a collapse in Brazil this year killed hundreds



THE LOOMING RISK OF **TAILINGS DAMS**

By **Moira Warburton, Sam Hart, Júlia Ledur,
Ernest Scheyder and Ally J. Levine**

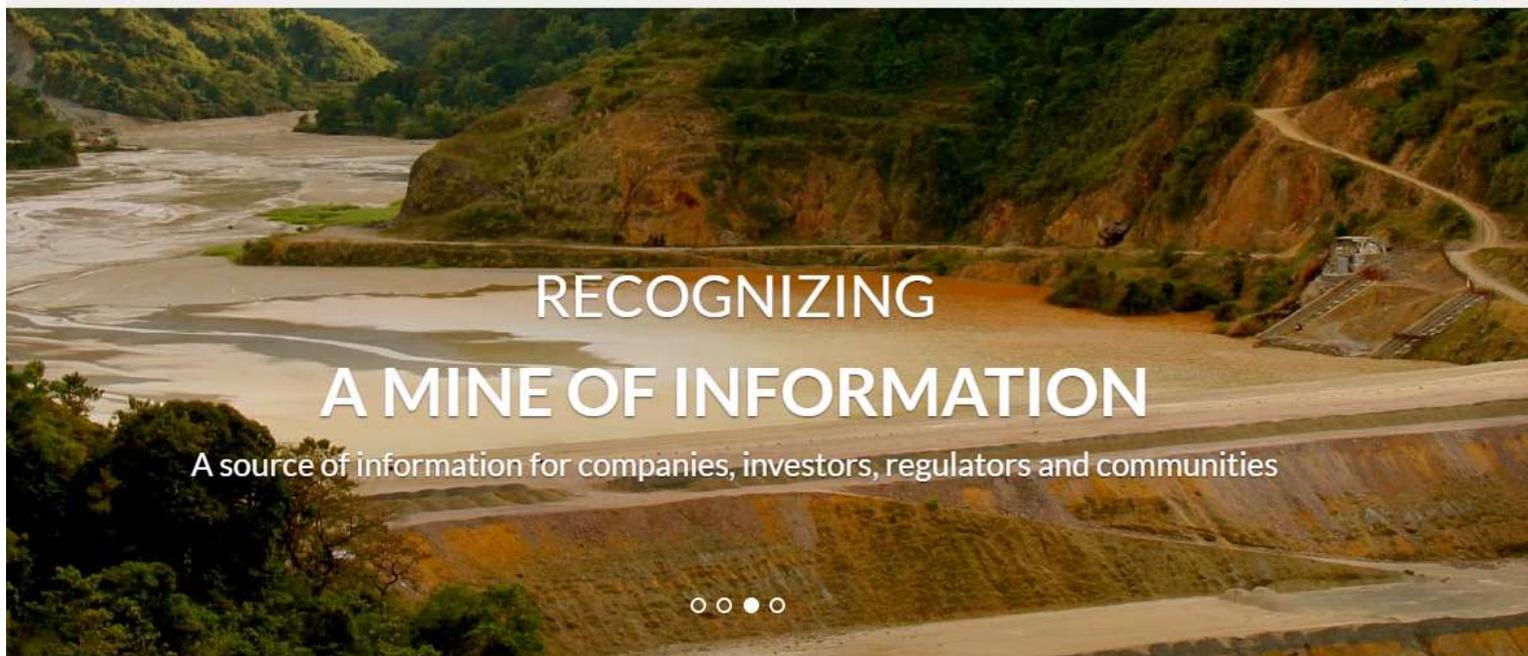
PUBLISHED DEC. 19, 2019

UPDATED JAN. 3, 2020

3rd Intervention

Independent Global Database to Drive Transparency & Best Practice





RECOGNIZING A MINE OF INFORMATION

A source of information for companies, investors, regulators and communities



DISCLOSURES

This portal brings together all of the disclosures that mining companies have made about their tailings storage facilities. It gives communities, investors, regulators and the media unprecedented access to information about mine waste.



98

MINING COMPANIES



162

PARTNER COMPANIES



305

MINING OPERATORS



764

MINE SITES



1939

TAILINGS STORAGE
FACILITIES

Beta Version 2.0

Company Profile

Search

- Global Mining
- Serabi Gold
- Severstal
- SGO Mining
- Sibanye-Stillwater
- Silvercorp Metals
- South32
- SSR Mining
- Sumitomo Metal Mining Co.
- Superior Gold
- Teck
- The Mosaic Company
- Total
- Trans-Siberian Gold
- Trevali Mining
- Troy Resources
- Vale
- Vedanta Resources
- Western Areas
- Yamana Gold



MINING COMPANY
Vale

PARTNER COMPANIES
2

MINING OPERATORS
3

MINE SITES
33

TAILINGS STORAGE FACILITIES
86

Global Tailings Portal Dashboard

[Original disclosure link](#)

Tailings storage facility height and year of construction

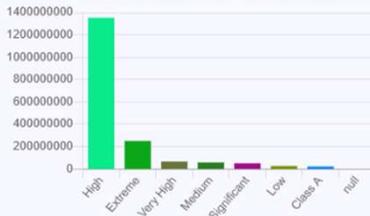


Total active TSF	Total current volume	Total planned volume	Maximum height TSF
41	1,826,570,000 m ³	2,253,100,000 m ³	163 m
Downstream impact ass^t	Past stability concern	Extreme weather ass^t	Approved design
71	24	86	82

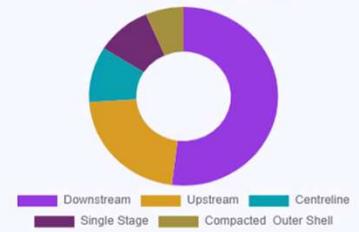
Search for tailings storage facility information Search:

TSF	Country	Operator	Mine	RaiseType	COF	CSA	Notes
1 Kalunga	Brazil	Vale S.A.	Manganes Azul	Downstream	Medium	Ordinance 70.389/17-ANM (Mining National Agency), Brazil	12. In the ANM's System (Brazilian National Mining Agency) called SIGBM Vale will inform that it is missing either the 'As Built' or 'Executive' Project, because the existing 'As Built' project is not complete, therefore Vale is working in the 'As Is' project in accordance to the DNPM (National Department of Mineral Production) Ordinance. (Source: SIGBM (ANM)) 17. According to Brazilian ordinance, it is not an obligation because it is classified as medium DPA (Associated Potential Damage).-6.1125295-50.308309
2 Kalunga	Brazil	Vale S.A.	Manganes	Upstream	Medium	Ordinance 70.389/17-ANM (Mining National Agency), Brazil	4. Inactive - no longer receiving tailings.

Current storage volume (m³) related to hazard categorization based on consequence of failure



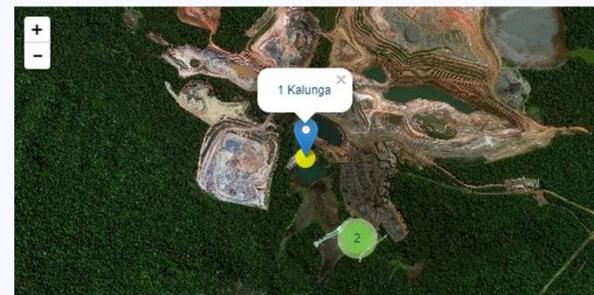
The current storage volume (m³) in relation to raising method of the Tailings storage facility



Storage volume: current (2019) and planned (2024)



DOWNSTREAM IMPACT ASS^t NO	PAST STABILITY CONCERN NO
EXTREME WEATHER ASS^t YES	APPROVED DESIGN YES
CURRENT VOLUME m³ 1,660,000	PLANNED 5-YEAR VOLUME m³ 1,660,000





Database Phase 2

// Space Enabled Monitoring of Tailings



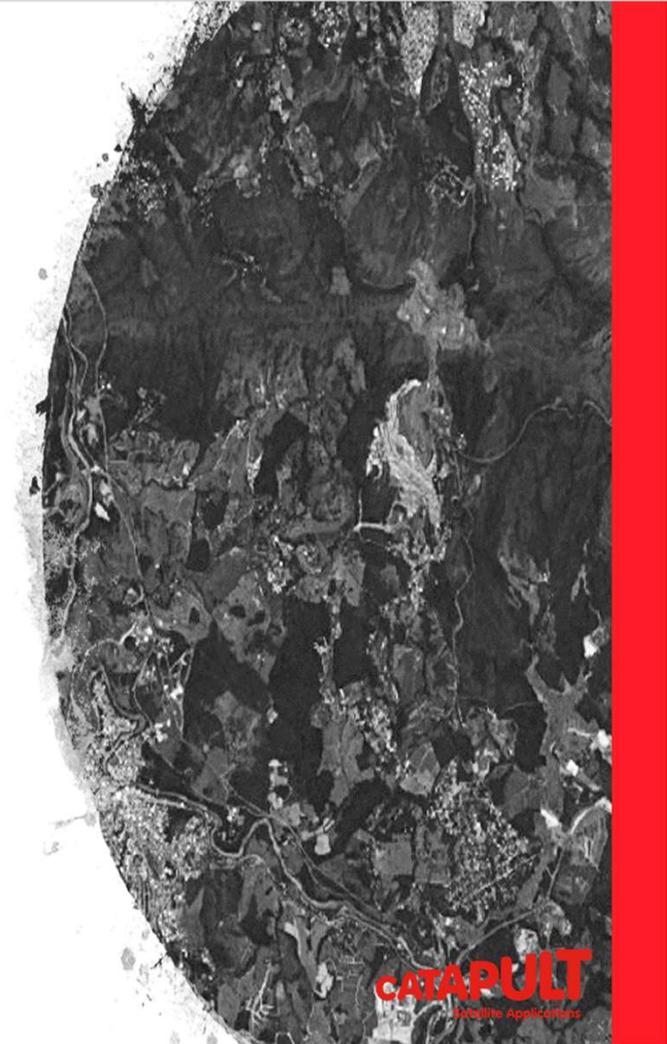
There is a clear need for cost-effective monitoring of tailings dams, both operational and abandoned, to help us to try to avoid a new disaster.



We are working in an R&D project using latest satellite technologies to generate up to date independent information on tailings storage facilities.

TAILINGS MONITORING

This initiative is funded by  Department for Business, Energy & Industrial Strategy



CATAPULT
Satellite Applications

4th Intervention:

4th: Financial Working Group ongoing examination of the relationship with company annual reporting

- Tailings are decision material for investors
- Unknown cost extremely difficult to estimate
- Role of insurance?

Q Search

Bloomberg

Business

Vale Sets Aside \$1.9 Billion to Decommission Nine Mine Dam

By [Andrew Hobbs](#)

8 June 2019, 05:02 BST

- ▶ CEO says Vale won't spare resources to address safety concerns
- ▶ Mining companies are reacting to greater scrutiny of mine dams



5th Intervention:

- Responding to community concerns



STATEMENT ON BRUMADINHO AND MARIANA TAILINGS DAMS

Friday 24th January 2020

On the eve of the first anniversary of the Brumadinho disaster, Cllr Doug McMurdo, Chairman of the Local Authority Pension Fund Forum (LAPFF), makes the following statement at the Global Mining & Tailings Safety Summit on behalf of the Church of England Pensions Board, the Council of Ethics for the Swedish Public Pension Funds and supported by the UN backed Principles for Responsible Investment delivered.

6th Intervention:



Global Mining & Tailings Safety Summit

DRAFT Joint Statement

24th January 2020

CONFIDENTIAL |

Investor Expectations of the Mining Industry

In order for investors to be confident that the mining sector and individual companies can retain their social and financial licence to operate, the following principles have been developed by the Mining and Tailings Safety Initiative. For companies we expect the following Principles to guide company decision-making in relation to tailings storage facilities:

- **Principle 1: Zero Harm to People**
- **Principle 2: Net-Zero Impact on the Environment**
- **Principle 3: Community Voices Must be Heard**
- **Principle 4: Implementation of the Global Standard: Best Practice as the Minimum Standard**
- **Principle 5: Public Reporting and Transparency & Independent Global Monitoring**

Investor Commitments for the Mining Industry

In support of these Principles for mining companies investors have agreed the following Principles for their own interaction with the sector be that in the provision of finance:

- **Principle 1: Zero Harm to People and the Environment**
- **Principle 2: Adoption of the New Global Standard on Tailings Management**
- **Principle 3: Recognising Tailings Risk**
- **Principle 4: Legacy and Phasing out of Tailings Waste**
- **Principle 5: Global Disclosure & Reporting on Tailings Management**

Joint Request for Partnership:

Challenge 1: Addressing the Legacy of Tailings & Global Monitoring

- Need to work together to establish an **independent 24/7 Global Alert System** for all tailings dams.
- Need to work together internationally to **identify and address existing tailings facilities that pose an unacceptable risk** to people or the environment.
- Companies must work with the finance sector and governments should develop an appropriate mechanism to ensure the **most dangerous TSFs are removed** or made safer.

Challenge 2: Phasing Out Tailings Facilities and Accelerating Technology

- Companies must **work together non-competitively** on the issue of tailings safety (as many do on health and safety matters) and on phasing out tailings facilities within the mining industry.
- Where technologies exist, these should be **deployed rapidly and at scale**, and not retained within one or two major operators.
- This is a sector-wide issue and technology solutions need to be applied across the sector as a whole.

Challenge 3: Financial Reporting & Standards

- Waste has often been treated as an externality, and the characteristics of the risks around tailings failure mean that it is extremely hard to make and report quantitative assessments.
- We recognise a need to explore improved ways of reporting on tailings, and this process has begun through the disclosure request of the Church of England Pensions Board and the Swedish Council on Ethics, and through the Global Mining and Tailings Safety Initiative working group on Disclosure.

Challenge 4: Insurance and Financial Protection

- Stakeholders ought to have confidence that appropriate insurance, “tailings bonds” or other financial provisions are in place if the worst should happen; in order to guarantee remedy for those affected, and rehabilitation for the environment.
- We understand that the commercial options in this regard are under-developed, and regulatory requirements vary and need to be aligned, potentially starting at the international level. We believe that it is in the interest of all stakeholders for appropriate finance and finance instruments to be available. We recognise that this requires action at the international level, and may require companies, governments and investors to collaborate to develop and deploy appropriate options.

